REMARKS

This is a full and timely response to the non-final Official Action mailed December 22, 2009 (the "Office Action" or "Action"). Reconsideration of the application in light of the above amendments and the following remarks is respectfully requested.

Claim Status:

No amendments to the claims are proposed by the present paper. Thus, claims 1-39 are currently pending for further action.

Prior Art:

Rejections under 35 U.S.C. §103(a):

1. In the recent Office Action, claims 1-39 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 7,301,677 to Oyumi (hereinafter Oyumi) in view of U.S. Patent No. 6,671,402 to Pass et al. (hereinafter Pass), and in further view of U.S. Patent No. 6,185,335 to Karidi et al. (hereinafter Karidi). For at least the following reasons, this rejection should be reconsidered and withdrawn.

Claims 1, 19, and 29:

Claim 1 recites:

A printing control system, comprising:
a plurality of printing units;
an image source providing a print job comprising a plurality of images; and
a system processing unit, wherein the system processing unit is configured to receive the plurality of images in the print job from the image source, calculate an image histogram for each image in the print job, determine a similarity of the images in the print job by comparing the calculated histograms, classify the images into at least a first and a second class based on the similarity of the histograms, and

send each of the images of the first class to a respective one of the printing units. (Emphasis added).

Similarly, claim 19 recites:

> A method of processing a print job including multiple images with a printing system including multiple printing units, comprising:
> identifying the number of printing units in the system, the system including at least a first printing unit and a second printing unit;
> ***calculating a histogram for each image in the print job;***
> ***comparing the histograms of the images in the print job to determine similarity between the images;***
> ***grouping the images into groups based on the similarity of the comparisons of the histograms;***
> ***sorting the images in the groups into classes, including at least a first class and a second class;*** and
> ***sending the images to the printing units for printing, including sending the images from the first class to the first printing unit and sending the images from the second class to the second printing unit.***

(Emphasis added).

Finally, claim 29 recites:

> A printing control system, comprising:
> a plurality of printing units;
> ***an image source providing a print job comprising a plurality of images; and***
> ***processing means for receiving the plurality of images in the print job from the image source, for calculating an image histogram for each image in the print job, for comparing the calculated histograms and determining a similarity of the images in the print job, for classifying the images into classes based on the similarity of the comparison, and for sending each of the images in a class to a respective one of the printing units.***

(Emphasis added).

In contrast, Oyumi, Pass and Karidi do not teach or suggest, separately or in combination, the recitations of claim 1. As an initial matter, the Office Action states that claims 19 and 29 "contain[] substantially the same subject matter as claim 1," and "[t]herefore, claims[s] 19 and 29 are rejected on the same grounds as claim 1." (Action, p. 9). Applicant does not necessarily agree.

However, with regard to claims 1 19, and 29, Oyumi, Pass and Karidi do not teach or suggest, separately or in combination, "[a] printing control system, comprising a plurality of printing units, an image source providing a print job comprising a plurality of images, and a system processing unit, wherein the system processing unit is configured to receive the plurality of images in the print job from the image source, calculate an image histogram for each image in the print job, determine a similarity of the images in the print job by comparing the calculated histograms, classify the images into at least a first and a second class based on the similarity of the histograms, and send each of the images of the first class to a respective one of the printing units." (Claim 1). Oyumi generally teaches "an image forming system that is capable of making uniform in size printed images" by placing alignment marks on the borders of a ***printed page***, and then using the alignment marks to print or realign the page for printing. (Oyumi, Abstract and col. 8, lines 40-50).

The Office Action asserts that the calibration and scanning of these alignment marks as taught by Oyumi teaches "calculate[ing] an image histogram (Fig. 9, Density Histogram) for each image in the print job." (Action, p. 4). This, however, is incorrect. Oyumi does not teach or suggest the calculation of any histogram of any image ***which is to be printed (i.e. in a print job)***. In contrast, Oyumi simply teaches locating existing alignment marks on a previously printed page by scanning the alignment marks and using a histogram to precisely locate the alignment marks. (Oyumi, col. 9 line 32-col. 10, line 49). These alignment marks cannot be reasonably interpreted as "a plurality of images in a print job" which are sent to a "printing unit" because ***they are already printed*** on the substrate. Thus, there is no way the system of Oyumi can calculate an image histogram for each image in a print job. Further, for the same reason, Oyumi cannot teach or suggest sending "each of the images of the first class

to a respective one of the printing units" because the alignment marks already exist on the page.

Still further, Oyumi does not teach or suggest calculating an "image histogram for *each image*" in a "plurality of images in the print job." Specifically, Oyumi does not teach or suggest calculating an image histogram of the primary image. In contrast, Oyumi teaches "enlarging or shrinking" the primary image according to the position of the alignment marks (Oyumi, col. 6, lines 40-43).

Even still further, Oyumi does not teach or suggest sending "each of the images of the first class to a respective one of the printing units." In contrast, the quoted portions of Oyumi teach that "enlarge[ing] an image" then "distributing the enlarged image data to the respective printers." (Oyumi, col. 6, lines 40-43). Clearly this portion of Oyumi teaches distribution of a single image to multiple printers.

The Office Action then concedes that Oyumi does not teach or suggest "determining a similarity of the images in the print job by comparing the calculated histograms; [and] classifying the images into at least a first and a second class based on the similarity of the histograms." (Action, p. 4). Consequently, the Action cites Pass. However, Pass does not remedy the shortcomings of Oyumi. Specifically, Pass does not teach or suggest determining a similarity of the images in the print job by comparing the calculated histogram. Rather, Pass teaches searching for images contained in a database using information extracted from the images (Pass, col. 1, lines 14-31; col. 8, line 30 – col. 11, line 27). Nowhere does Pass teach or suggest anything related to "determining the ***similarity of images in a print job***." Pass is absolutely silent with respect to printing, print jobs, images which make up print jobs, or determining similarity of images in a print job.

Further, Pass does not teach or suggest "classify the images into at least a first and a second class based on the similarity of the histograms." (Claim 1). Pass simply teaches the following:

> Representing an image may further include calculating a posterized joint histogram. For example, the posterized joint histogram may be calculated after the weighting factor has been applied. Information reflecting more than one feature of the image may be extracted from the image. Extracted features may include color, edge density, texturedness, gradient magnitude, and rank.

(Pass, col. 1, ll. 46-52).

In other words, Pass simply teaches extracting features from an image. Pass does not teach or suggest classifying images into at least a first and a second class.

In light of the above-described deficiencies in Oyumi and Pass, the Office Action also concedes that Oyumi as modified by Pass "does not expressly disclose sending each of the images of the first class to a respective one of the printing units." (Action, p. 5). Thus, the Office Action cites to Karidi. However, Karidi does not remedy the shortcomings of Oyumi and Pass. Specifically, Karidi does not teach or suggest "send[ing] each of the images of the first class to a respective one of the printing units." (Claim 1).

The Office Action asserts that "Karidi . . . discloses sending each of the images of the first class to a respective one of the printing units (Fig 3, #100 and Fig. 1. i.e. The processed image in RGB or CMYK 22 may be routed to a print engine 24. The RGB or CMYK pixel are separated into classes. Column 4, lines 13-42)." (Action, p. 5). However, this is incorrect.

With regard to Figure 3, element 100 of Karidi, Karidi teaches that "FIG. 3 is a flow diagram illustrating the boundary technique. The boundary technique may be expressed as follows: ***In the neighborhood of every pixel, separate the neighbor pixels into two classes, i.e. dark and light*** (100)." However, this in no way can be interpreted as either "classify the

images into at least a first and a second class" or "sending each of the images of the first class to a respective one of the printing units." (Claim 1). The method described in Karidi simply separates pixels within a single image, and does not classify images into a first and a second class. Further, this portion of Karidi simply does not discuss sending any number of images of a first class to a printing unit.

With regard to the Office Action's statements that "Fig. 1. i.e. The processed image in RGB or CMYK 22 may be routed to a print engine 24. ***The RGB or CMYK pixels are separated into classes***. Column 4, lines 13-42," it is clear that this section of Karidi simply teaches sending a single processed image to a printer, whether that image is in RGB or CMYK (*see*, Karidi, col. 4, ll. 14-15), and does not teach or suggest sending each of the images of a first class to a respective one of the printing units. Further, as discussed above, Karidi simply teaches that the ***pixels*** within a single image are classified, and does not classify images into a first and a second class (*see*, col. 4, ll. 23-24, 29-30, and 39-42).

In contrast, claim 1 recites: "[a] printing control system, comprising a plurality of printing units, an image source providing a print job comprising a plurality of images, and a system processing unit, wherein the system processing unit is configured to receive the plurality of images in the print job from the image source, calculate an image histogram for each image in the print job, determine a similarity of the images in the print job by comparing the calculated histograms, classify the images into at least a first and a second class based on the similarity of the histograms, and send each of the images of the first class to a respective one of the printing units." (*See also*, claims 19 and 29). This subject matter is clearly not taught or suggested by Oyumi, Pass, and Karidi.

The Supreme Court recently addressed the issue of obviousness in *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727 (2007). The Court stated that the *Graham v. John Deere Co. of*

Kansas City, 383, U.S. 1 (1966), factors still control an obviousness inquiry. Under the analysis required by *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), to support a rejection under § 103, the scope and content of the prior art must first be determined, followed by an assessment of the differences between the prior art and the claim at issue in view of the ordinary skill in the art. In the present case, the scope and content of the prior art, as evidenced by Oyumi, Pass, and Karidi, did not include the claimed subject matter, particularly a printing control system, comprising a plurality of printing units, an image source providing a print job comprising a plurality of images, and a system processing unit, wherein the system processing unit is configured to receive the plurality of images in the print job from the image source, calculate an image histogram for each image in the print job, determine a similarity of the images in the print job by comparing the calculated histograms, classify the images into at least a first and a second class based on the similarity of the histograms, and send each of the images of the first class to a respective one of the printing units.

The differences between the cited prior art and the indicated claims are significant because the recitations of claims 1, 19, and 29 provide for minimizing objectionable deviations between the printed versions of similar images in a print job by sending a class of similar images to one printing unit. (*See, e.g.* Applicant's original specification, p. 4, line 5 through page 5, line 4). Thus, the claimed subject matter provides features and advantages not known or available in the cited prior art. Consequently, the cited prior art will not support a rejection of claim 1 under 35 U.S.C. § 103 and *Graham*. Therefore, for at least the reasons explained here, the rejection based on Oyumi, Pass, and Karidi of claims 1, 19, and 29 and their dependent claims should be reconsidered and withdrawn.

Additionally, various dependent claims of the application recite subject matter that is further patentable over the cited prior art. Specific, non-exclusive examples follow.

Claims 2, 20, and 30:

Claim 2 recites: "[t]he system of claim 1, wherein the system processing unit is adapted to compare the calculated histograms by calculating cross-correlation values between the images in the print job based on the histograms.". Similarly, claim 20 recites: "[t]he method of claim 19, wherein comparing the histograms of the images includes calculating cross-correlation values between the images in the print job based on the histograms." Finally, claim 30 recites: "[t]he system of claim 29, wherein the processing means compares the calculated histograms by calculating cross-correlation values between the images in the print job based on the histograms."

In contrast, Oyumi, Pass, and Karidi do not teach or suggest "calculating cross-correlation values between the images in the print job based on the histograms." (Claims 2, 20, and 30). The Office Action concedes that Oyumi and Pass do "not expressly disclose wherein the system processing unit is adapted to compare the calculated histograms by calculating cross-correlation values between the images in the print job based on the histograms." (Action, p. 5).

Thus, the Office Action cites to Karidi and states that "Fig. 4 [of Karidi] is a flow diagram illustrating a cross correlation technique for imaging classification. Column 9, lines 13-67). However, this is incorrect. It is clear that this section of Karidi teaches "determin[ing] whether or not the current ***pixel*** should be marked as a halftone candidate." (Karidi, col. 9, ll. 17-20) (emphasis added). Thus, as discussed above in connection with independent claims 1, 19, and 29, Karidi simply teaches classifying pixels within an image,

and not images based on histograms. Thus, Karidi clearly cannot teach or suggest calculating cross-correlation values ***between images*** in a print job.

In contrast, claims 2, 20, and 30 recite: "calculating cross-correlation values between the images in the print job based on the histograms." This subject matter is clearly not taught or suggested by Oyumi, Pass, and Karidi.

Again, under the analysis required by *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), to support a rejection under § 103, the scope and content of the prior art must first be determined, followed by an assessment of the differences between the prior art and the claim at issue in view of the ordinary skill in the art. In the present case, the scope and content of the prior art, as evidenced by Oyumi, Pass, and Karidi, did not include the claimed subject matter, particularly calculating cross-correlation values between the images in the print job based on the histograms.

The differences between the cited prior art and the indicated claims are significant because the recitations of claims 2, 20, and 30 provide for minimizing objectionable deviations between the printed versions of similar images in a print job by sending a class of similar images to one printing unit. (*See, e.g.* Applicant's original specification, p. 4, line 5 through page 5, line 4). Thus, the claimed subject matter provides features and advantages not known or available in the cited prior art. Consequently, the cited prior art will not support a rejection of claims 2, 20, and 30 under 35 U.S.C. § 103 and *Graham*. Therefore, for at least the reasons explained here, the rejection based on Oyumi, Pass, and Karidi of claims 2, 20, and 30 and their dependent claims should be reconsidered and withdrawn.

Claims 3, 13, and 31:

Claim 3 recites:

> The system of claim 2, wherein the plurality of printing units includes at least a first printing unit and a second printing unit, ***wherein the number of classes equals the number of printing units and includes at least the first class and the second class***, and ***wherein the first class of images is printed on the first printing unit and the second class of images is printed on the second printing unit***.

(Emphasis added).

Similarly, claim 13 recites: "[t]he system of claim 12, ***wherein the number of core classes is equal to the number of printing units in the system***." (Emphasis added). Finally, claim 31 recites: "[t]he system of claim 30, wherein the plurality of printing units includes at least a first printing unit and a second printing unit, ***wherein the number of classes equals the number of printing units and includes at least a first class and a second class, and wherein the first class of images is printed on the first printing unit and the second class of images is printed on the second printing unit***." (Emphasis added).

The Office Action argues that Oyumi teaches "wherein the number of classes equals the number of printing units" and "wherein the first class of images is printed on the first print unit and the second class of images is printed on the second print unit." (Action, pp. 6, 8, and 11). However, nowhere in the cited portions of Oyumi is there any teaching or suggestion that "the number of classes equals the printing units." In contrast, in the cited portions of Oyumi appears to be gathering information from various printers so the various printers produce similarly sized copies of an image. (Oyumi, col. 12, lines 21-26). Clearly the calibration data for each printer cannot be reasonably understood as the recited "first class of images." The calibration data are numeric values which represent reduction ratios used to resize an image so that the image can be repeatedly printed on any of a number of printers (Oyumi, col. 4, line 64 –col. 5 line 7; col. 12, lines 24-26).

In contrast, claim 3 recites: "wherein the number of classes equals the number of printing units and includes at least the first class and the second class, and wherein the first

class of images is printed on the first printing unit and the second class of images is printed on the second printing unit." (*See also*, claims 13 and 31). This subject matter is clearly not taught or suggested by Oyumi, Pass, and Karidi.

Again, under the analysis required by *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), to support a rejection under § 103, the scope and content of the prior art must first be determined, followed by an assessment of the differences between the prior art and the claim at issue in view of the ordinary skill in the art. In the present case, the scope and content of the prior art, as evidenced by Oyumi, Pass, and Karidi, did not include the claimed subject matter, particularly wherein the number of classes equals the number of printing units and includes at least the first class and the second class, and wherein the first class of images is printed on the first printing unit and the second class of images is printed on the second printing unit..

The differences between the cited prior art and the indicated claims are significant because the recitations of claims 3, 13, and 31 provide for minimizing objectionable deviations between the printed versions of similar images in a print job by sending a class of similar images to one printing unit. (*See, e.g.* Applicant's original specification, p. 4, line 5 through page 5, line 4). Thus, the claimed subject matter provides features and advantages not known or available in the cited prior art. Consequently, the cited prior art will not support a rejection of claims 3, 13, and 31 under 35 U.S.C. § 103 and *Graham*. Therefore, for at least the reasons explained here, the rejection based on Oyumi, Pass, and Karidi of claims 3, 13, and 31 should be reconsidered and withdrawn.

Claim 4:

Claim 4 recites: "[t]he system of claim 2, wherein ***the cross-correlation values***

between the images in the print job ***are normalized*** and have a value of one of 0, 1, and between 0 and 1, ***wherein the value is 0 when the images are most dissimilar and is 1 when the images are most similar***." In contrast, Oyumi, Pass, and Karidi do not teach or suggest "wherein the cross-correlation values between the images in the print job are normalized and have a value of one of 0, 1, and between 0 and 1, wherein the value is 0 when the images are most dissimilar and is 1 when the images are most similar." (Claim 4).

The Office Action states that Karidi teaches the recitations of claim 4. (Action, pp. 6-7). However, this is incorrect. Karidi states the following within the computer code: "The purpose of this piece of code is to compute the 'class_threshold': This number will ***determine the threshold from light to dark in the current window. Pixels with higher intensity than the threshold are considered light***. The others are dark." In other words, Karidi simply teaches computer code used to determine whether a pixel in an image is to be considered a light or dark pixel. Nowhere in this section does Karidi disclose normalization of cross-correlation values. Further, although Karidi discloses assigning values of "0" or "1," these values do not reflect dissimilarity or similarity between images, wherein the value is 0 when the images are most dissimilar and is 1 when the images are most similar.

In contrast, claim 4 recites: "[t]he system of claim 2, wherein the cross-correlation values between the images in the print job are normalized and have a value of one of 0, 1, and between 0 and 1, wherein the value is 0 when the images are most dissimilar and is 1 when the images are most similar." This subject matter is clearly not taught or suggested by Oyumi, Pass, and Karidi.

Again, under the analysis required by *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), to support a rejection under § 103, the scope and content of the prior art must first be determined, followed by an assessment of the differences between the prior art and the

claim at issue in view of the ordinary skill in the art. In the present case, the scope and content of the prior art, as evidenced by Oyumi, Pass, and Karidi, did not include the claimed subject matter, particularly the system of claim 2, wherein the cross-correlation values between the images in the print job are normalized and have a value of one of 0, 1, and between 0 and 1, wherein the value is 0 when the images are most dissimilar and is 1 when the images are most similar.

The differences between the cited prior art and the indicated claims are significant because the recitations of claim 4 provide for minimizing objectionable deviations between the printed versions of similar images in a print job by sending a class of similar images to one printing unit. (*See, e.g.* Applicant's original specification, p. 4, line 5 through page 5, line 4). Thus, the claimed subject matter provides features and advantages not known or available in the cited prior art. Consequently, the cited prior art will not support a rejection of claim 4 under 35 U.S.C. § 103 and *Graham*. Therefore, for at least the reasons explained here, the rejection based on Oyumi, Pass, and Karidi of claim 4 should be reconsidered and withdrawn.

Claims 8, 23, and 34:

Claim 8 recites: "[t]he system of claim 6, wherein the system processing unit is adapted to classify the images based on the comparison of the calculated histograms by also ***forming subgroups from the groups by regrouping groups that have image members in common***." (Emphasis added). Claim 23 similarly recites: "[t]he method of claim 22, wherein sorting the images in the groups into classes includes ***forming subgroups from the groups by merging groups that have image members in common***." (Emphasis added). Finally, claim 34 recites: "[t]he system of claim 33, wherein the processing means classifies the images

the images based on the comparison of the calculated histograms by also ***forming subgroups from the groups by regrouping groups that have image members in common***." (Emphasis added). In contrast, Oyumi, Pass, and Karidi do not teach or suggest "forming subgroups from the groups by regrouping groups that have image members in common." (Claim 8) (*see also*, claims 23 and 34).

The Office Action cites to Fig. 3, steps 100 through 120 and column 4, lines 39-67 of Karidi in rejecting claims 8, 23, and 34. (Action, pp. 7 and 10). However, this portion of Karidi makes no mention of forming subgroups from groups or regrouping any number of groups that have image members in common.

In contrast, claims 8 recites: "forming subgroups from the groups by regrouping groups that have image members in common." (*See also*, claims 23 and 34). This subject matter is not taught or suggested by Oyumi, Pass, and Karidi.

Again, under the analysis required by *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), to support a rejection under § 103, the scope and content of the prior art must first be determined, followed by an assessment of the differences between the prior art and the claim at issue in view of the ordinary skill in the art. In the present case, the scope and content of the prior art, as evidenced by Oyumi, Pass, and Karidi, did not include the claimed subject matter, particularly forming subgroups from the groups by regrouping groups that have image members in common.

The differences between the cited prior art and the indicated claims are significant because the recitations of claims 8, 23, and 34 provide for minimizing objectionable deviations between the printed versions of similar images in a print job by sending a class of similar images to one printing unit. (*See, e.g.* Applicant's original specification, p. 4, line 5 through page 5, line 4). Thus, the claimed subject matter provides features and advantages

not known or available in the cited prior art. Consequently, the cited prior art will not support a rejection of claims 8, 23, and 34 under 35 U.S.C. § 103 and *Graham*. Therefore, for at least the reasons explained here, the rejection based on Oyumi, Pass, and Karidi of claims 8, 23, and 34 should be reconsidered and withdrawn.

Claims 9, 24, and 35:

Claim 9 recites: "[t]he system of claim 8, wherein the system processing unit is adapted to ***merge groups that have at least half of the image members in common into subgroups***." (Emphasis added). Similarly, claim 24 recites: "[t]he method of claim 23, wherein forming subgroups from the groups includes ***merging into respective subgroups groups that have at least half of the image members in common***." (Emphasis added). Finally, claim 35 recites: "[t]he system of claim 34, wherein the processing means ***merges groups that have at least half of the image members in common into subgroups***." (Emphasis added). In contrast, Oyumi, Pass, and Karidi do not teach or suggest merging into respective subgroups groups that have at least half of the image members in common. (Claims 9, 24, and 35).

The Office Action cites to Fig. 3, steps 100 through 120 and column 4, lines 39-67 of Karidi in rejecting claims 9, 24, and 35. (Action, pp. 7 and 10). However, as stated above in connection with the patentability of claims 8, 23, and 34, this portion of Karidi makes no mention of arranging groups into subgroups. In this regard, Karidi also does not teach or suggest merging groups that have at least half of the images in common.

In contrast, claim 9 recites: "[t]he system of claim 8, wherein the system processing unit is adapted to merge groups that have at least half of the image members in common into

subgroups." (*See also*, claims 24 and 35). This subject matter is not taught or suggested by Oyumi, Pass, and Karidi.

Again, under the analysis required by *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), to support a rejection under § 103, the scope and content of the prior art must first be determined, followed by an assessment of the differences between the prior art and the claim at issue in view of the ordinary skill in the art. In the present case, the scope and content of the prior art, as evidenced by Oyumi, Pass, and Karidi, did not include the claimed subject matter, particularly wherein the system processing unit is adapted to merge groups that have at least half of the image members in common into subgroups.

The differences between the cited prior art and the indicated claims are significant because the recitations of claims 9, 24, and 35 provide for minimizing objectionable deviations between the printed versions of similar images in a print job by sending a class of similar images to one printing unit. (*See, e.g.* Applicant's original specification, p. 4, line 5 through page 5, line 4). Thus, the claimed subject matter provides features and advantages not known or available in the cited prior art. Consequently, the cited prior art will not support a rejection of claims 9, 24, and 35 under 35 U.S.C. § 103 and *Graham*. Therefore, for at least the reasons explained here, the rejection based on Oyumi, Pass, and Karidi of claims 9, 24, and 35 should be reconsidered and withdrawn.

Claims 10, 11, 25, 26, 36, and 37:

Claims 10 and 11 recite: "[t]he system of claim 8, wherein the system processing unit is adapted ***to regroup image members from groups*** having less than half of the image members in common ***into subgroups*** by computing an average cross-correlation value of each image member of the groups with each group to determine the group to which the image

member belongs," and "[t]he system of claim 8, wherein the system processing unit is adapted to classify the images based on the comparison of the calculated histograms by also ***forming sets from the subgroups by merging subgroups that have similar image members***," respectively. Claims 25, 26, 36, and 37 contain similar recitations. In contrast, Oyumi, Pass, and Karidi do not teach or suggest regrouping image members from groups into subgroups or forming sets from subgroups by merging subgroups that have similar image members. (Claims 10, 11, 25, 26, 36, and 37).

As discussed above in connection with the patentability of claims 8, 9, 23, 24, 34, and 35, Karidi simply does not teach or suggest arranging groups into subgroups. In this regard, Karidi also does not teach or suggest merging groups that have at least half of the images in common or regrouping image members from groups having less than half of the image members in common into subgroups.

In contrast, claims 10 and 11 recite: "[t]he system of claim 8, wherein the system processing unit is adapted to regroup image members from groups having less than half of the image members in common into subgroups by computing an average cross-correlation value of each image member of the groups with each group to determine the group to which the image member belongs," and "[t]he system of claim 8, wherein the system processing unit is adapted to classify the images based on the comparison of the calculated histograms by also forming sets from the subgroups by merging subgroups that have similar image members," respectively. (*See also*, claims 25, 26, 36, and 37). This subject matter is simply not taught or suggested by Oyumi, Pass, and Karidi.

Again, under the analysis required by *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), to support a rejection under § 103, the scope and content of the prior art must first be determined, followed by an assessment of the differences between the prior art and the

claim at issue in view of the ordinary skill in the art. In the present case, the scope and content of the prior art, as evidenced by Oyumi, Pass, and Karidi, did not include the claimed subject matter, particularly wherein the system processing unit is adapted to regroup image members from groups having less than half of the image members in common into subgroups by computing an average cross-correlation value of each image member of the groups with each group to determine the group to which the image member belongs and wherein the system processing unit is adapted to classify the images based on the comparison of the calculated histograms by also forming sets from the subgroups by merging subgroups that have similar image members.

The differences between the cited prior art and the indicated claims are significant because the recitations of claims 10, 11, 25, 26, 36, and 37 provide for minimizing objectionable deviations between the printed versions of similar images in a print job by sending a class of similar images to one printing unit. (*See, e.g.* Applicant's original specification, p. 4, line 5 through page 5, line 4). Thus, the claimed subject matter provides features and advantages not known or available in the cited prior art. Consequently, the cited prior art will not support a rejection of claims 10, 11, 25, 26, 36, and 37 under 35 U.S.C. § 103 and *Graham*. Therefore, for at least the reasons explained here, the rejection based on Oyumi, Pass, and Karidi of claims 10, 11, 25, 26, 36, and 37 should be reconsidered and withdrawn.

Claims 12, 27, and 38:

Claim 12 recites: "[t]he system of claim 11, wherein the system processing unit is adapted to classify the images based on the comparison of the calculated histograms by also ***forming core classes from the sets by selecting the sets with the greatest number of image***

members as the core classes." (Emphasis added). Similarly, claim 27 recites: "[t]he method of claim 26, wherein sorting the images in the groups into classes further includes ***forming core classes from the sets by selecting the sets with the greatest number of image members as the core classes***." (Emphasis added). Finally, claim 38 recites: "[t]he system of claim 37, wherein the processing means classifies the images based on the comparison of the calculated histograms by also ***forming core classes from the sets by selecting the sets with the greatest number of image members as the core classes***." (Emphasis added). In contrast, Oyumi, Pass, and Karidi do not teach or suggest "forming core classes from the sets by selecting the sets with the greatest number of image members as the core classes." (Claim 12) (*see also*, claims 27 and 38).

The Office Action cites to Fig. 3, steps 100 through 120 and column 4, lines 39-67 of Karidi in rejecting claims 12, 27, and 38. (Action, pp. 8 and 10). However, Karidi makes no mention of forming core classes. Further, Karidi also does not teach or suggest selecting the sets with the greatest number of image members as the core classes.

In contrast, claim 12 recites: "[t]he system of claim 11, wherein the system processing unit is adapted to classify the images based on the comparison of the calculated histograms by also forming core classes from the sets by selecting the sets with the greatest number of image members as the core classes." (*See also*, claims 27 and 38). This subject matter is clearly not taught or suggested by Oyumi, Pass, and Karidi.

Again, under the analysis required by *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), to support a rejection under § 103, the scope and content of the prior art must first be determined, followed by an assessment of the differences between the prior art and the claim at issue in view of the ordinary skill in the art. In the present case, the scope and content of the prior art, as evidenced by Oyumi, Pass, and Karidi, did not include the claimed

subject matter, particularly, wherein the system processing unit is adapted to classify the images based on the comparison of the calculated histograms by also forming core classes from the sets by selecting the sets with the greatest number of image members as the core classes..

The differences between the cited prior art and the indicated claims are significant because the recitations of claims 12, 27, and 38 provide for minimizing objectionable deviations between the printed versions of similar images in a print job by sending a class of similar images to one printing unit. (*See, e.g.* Applicant's original specification, p. 4, line 5 through page 5, line 4). Thus, the claimed subject matter provides features and advantages not known or available in the cited prior art. Consequently, the cited prior art will not support a rejection of claims 12, 27, and 38 under 35 U.S.C. § 103 and *Graham*. Therefore, for at least the reasons explained here, the rejection based on Oyumi, Pass, and Karidi of claims 12, 27, and 38 should be reconsidered and withdrawn.

Claims 17 and 18:

Claim 17 recites: "[t]he system of claim 1, wherein the printing units are each ***print engines contained in a single printer***." (Emphasis added). Claim 18 similarly recites: "[t]he system of claim 1, wherein the printing units are each ***printheads contained in a single printer***." (Emphasis added). In contrast, Oyumi, Pass, and Karidi do not teach or suggest "wherein the printing units are each print engines [or printheeads] contained in a single printer." (Claims 17 and 18).

The Office Action cites to Fig. 2 of Oyumi and states that the ***single*** printer of Fig. 2 may be interpreted as a motor (not shown in Fig. 2) or a developing unit. (Action, p. 9). However, this is incorrect. Oyumi clearly teaches that "reference numbers 301 and 302 each

denote a printer," and Fig. 2 clearly depicts the printers 301 and 302 as separate elements. (Oyumi, Fig. 2, and col. 6, ll. 32-33). Thus, Oyumi can not teach or suggest sending different groups of images to printing units in a single printer.

In contrast, claims 17 and 18 recite: "[t]he system of claim 1, wherein the printing units are each print engines contained in a single printer," and "[t]he system of claim 1, wherein the printing units are each printheads contained in a single printer," respectively. This subject matter is clearly not taught or suggested by Oyumi, Pass, and Karidi.

Again, under the analysis required by *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), to support a rejection under § 103, the scope and content of the prior art must first be determined, followed by an assessment of the differences between the prior art and the claim at issue in view of the ordinary skill in the art. In the present case, the scope and content of the prior art, as evidenced by Oyumi, Pass, and Karidi, did not include the claimed subject matter, particularly, wherein the printing units are each print engines contained in a single printer, and wherein the printing units are each printheads contained in a single printer.

The differences between the cited prior art and the indicated claims are significant because the recitations of claims 17 and 18 provide for minimizing objectionable deviations between the printed versions of similar images in a print job and maximizing the speed and efficiency of a print job by sending a class of similar images to one printing unit. (*See, e.g.* Applicant's original specification, p. 4, line 5 through page 5, line 4). Thus, the claimed subject matter provides features and advantages not known or available in the cited prior art. Consequently, the cited prior art will not support a rejection of claims 17 and 18 under 35 U.S.C. § 103 and *Graham*. Therefore, for at least the reasons explained here, the rejection based on Oyumi, Pass, and Karidi of claims 17 and 18 should be reconsidered and withdrawn.

Claims 14 and 15:

The rejection of claims 14 and 15 should be reconsidered and withdrawn for at least the same reasons given above in favor of the patentability of claim 12.

Conclusion:

In view of the preceding arguments, all claims are believed to be in condition for allowance over the prior art of record. Therefore, this response is believed to be a complete response to the Office Action. However, Applicant reserves the right to set forth further arguments in future papers supporting the patentability of any of the claims, including the separate patentability of the dependent claims not explicitly addressed herein. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed.

The absence of a reply to a specific rejection, issue, or comment in the Office Action does not signify agreement with or concession of that rejection, issue or comment. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment. Further, for any instances in which the Examiner took Official Notice in the Office Action, Applicants expressly do not acquiesce to the taking of Official Notice, and respectfully request that the Examiner provide an affidavit to support the Official Notice taken in the next Office Action, as required by 37 CFR 1.104(d)(2) and MPEP § 2144.03.

If the Examiner has any comments or suggestions which could place this application in better form, the Examiner is requested to telephone the undersigned attorney at the number listed below.

Respectfully submitted,

DATE: March 22, 2010

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